

Remarks

Claims 1-19 were examined. The Examiner indicated that claims 2-10, 13-17 and 19 would be allowable if rewritten into independent form to encompass the limitations of their base and intervening claims. These amendments have not been presented in view of the amendments above, which are believed to place the case into condition for allowance and which are made with the full support of the specification. It is noted that the Examiner objected to certain language in claims 1 and 11 which is now deleted per the amendments above. Claim 6 has been amended to clarify that the locator is being moved. Hence, it is believed that the Examiner's objections have been overcome. It is noted that Applicant disagrees with the Examiner's interpretation of the phrase "cable line angular orientation" since a cable line locating signal does not exhibit locate points. The latter are specific characteristics of a dipole locating signal. The characteristics of a cable line locating signal, however, are somewhat related to the characteristics of a locate line, as described in paragraphs 75 and 77 of the specification. It is noted that Applicant's figures 2 and 3 illustrate a dipole field and locate line, while figures 10 and 11 illustrate a cable line signal. Applicant appreciates the Examiner's review of the Application. A supplemental IDS has been submitted herewith.

The Non-Statutory Double Patenting Rejection

The Examiner rejected claims 1, 11, 12 and 18 under the judicially created doctrine of obviousness-type double patenting on the basis that these claims are broader than and encompass the boundaries of claims 1, 10, 11 and 13, respectively of U.S. Patent no. 6,496,008 (hereinafter the '008 patent) and are an obvious variance from the prior defined invention. Applicant respectfully traverses. The claims of the '008 patent are specifically directed to the use of a dipole field while the present claims are directed to cable locating with a cable locating field. These electromagnetic fields are not the same and require different locating methodologies. The practice of the claims of the present invention does not allow one to locate a boring tool, as is the objective of the claims of the '008 patent. Hence, the present claims are submitted to be of a different scope than the claims of the '008 patent, which does not encompass the scope of the '008 patent claims. Accordingly, for at least these reasons, withdrawal of the double patenting rejection is respectfully requested.

The Rejection Under 35 U.S.C. § 102

The Examiner rejected claim 1 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent no. 4,387,340 issued to Peterman. With reference to Peterman, the Examiner asserts that Peterman is able to establish a cable line angular orientation relative to the particular orientation of the portable locator. Applicant respectfully traverses. The Peterman locator is able to find a position immediately above the cable line, at which position the cable depth can be determined. This location is found using two antenna coils that are indicated by the reference numbers 21 and 23 in figure 1 of Peterman. The locating signal flux measured by these antennas is largest when lower bar 20, supporting these antennas, is normal to the cable as seen in a plan view. When the locator is to the side of the cable, the antennas will indicate different signal strengths, but directly above the cable line the signal strength is identical.

After having used the Peterman locator, with the antenna configuration just described, to find a position above the cable, the locator can be aligned with the axis of the cable line such that the cable coincides with the plane of

symmetry of the locator, as seen in plan view. However, Applicant is unable to find any reasonable teaching, disclosure or suggestion in Peterman as to how this locator, using a local flux intensity, could provide a measurement of the angle between the locator and the direction of the cable line. The locator of the present invention, as recited by amended claim 1, provides for determining the actual cable line angular orientation in relation to the locator orientation. In this regard, it should be appreciated that there is no need to rotate or otherwise change the locator orientation in order to provide this measurement. This feature, in and by itself, is considered to be highly advantageous over Peterman. Accordingly, for at least this reason, allowance of claim 1 over Peterman is respectfully requested.

Dependent claims 2, 3 and 6 have been amended in a manner that is consistent with the amendments made in claim 1. Independent claim 11 has been amended to reflect the limitations of amended claim 1, but in method form. Dependent claims 12, 15-17 and 19, depend either directly or indirectly from claim 11 and, therefore, have been amended in a way which is consistent with the amendments made in claim 11.

New claim 20 is a dependent claim which depends directly from amended claim 11 and reflects certain limitations taken from original claim 11. Further, the limitations of new claim 20 are reflected by certain limitations that are present in claim 2, but in apparatus form. Hence, it is believed that claim 20 is allowable over the art of record.

For all of the foregoing reasons, it is respectfully submitted that all of the Examiner's objections have been overcome and that the application is in condition for allowance. Hence, Applicant respectfully requests allowance of the claims under immediate consideration, and passage to issue of the application is solicited.

If the Examiner has any questions concerning this case, the Examiner is respectfully requested to contact Mike Pritzkau at 303-410-9254.

Respectfully submitted,



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